

REMARKS

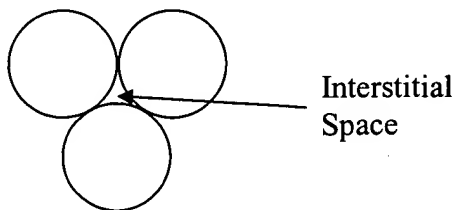
Applicant thanks the Examiner for the Office Action of November 2, 2005. In the Office Action, Claims 1, 2, and 4-18 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 1, 2, 6-10, 14, 22, 23, and 27-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carroll (US 5,157,813) in view of Hallenbeck (US 5,341,583). Claims 11-13, 32, and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carroll in view of Hallenbeck as applied to Claims 10 and 22 and further in view of Richardson (US 5,430,960). Claims 15-18, 24, and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carroll in view of Hallenbeck as applied to Claims 14 and 22 and further in view of Bidoia (US 4,961,544). Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Carroll in view of Hallenbeck as applied to Claim 22 and further in view of Martin (US 4,142,307).

Claims 1, 2, and 6-33 remain pending. As noted by the Examiner, Claims 3-5 have been withdrawn.

Rejection under 35 U.S.C. § 112, second paragraph

The Examiner rejected Claim 1 under 35 U.S.C. § 112, ¶ 2, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner objected that the limitation “worked to reduce the interstitial space between the strands” is “not clearly specified because the test by which the final product can be judged as to whether the cable has been worked to reduce the interstitial space between the strands is unknown.” Office Action at pp. 2-3. Applicant respectfully disagrees.

As Applicant notes in the specification, using multiple stranded cables in the described lacing systems can prove difficult. As would be understood by one of skill in the art, when multiple strands with generally round cross sections are combined to form a cable, an interstitial space remains between adjacent strands.



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The drawing above shows cross sections of three closely packed circular strands with abutting sides. Because of the circular or near circular geometry, an interstitial space is formed between the adjacent strands. Though the cross-sectional area of each individual strand is generally round, the cross-sectional profile of the multi strand cable is generally not. The cable has interstitial spaces between the strands and a multiple lobed exterior surface when viewed in cross section. As discussed in the application, due in part to the interstitial space, multi strand cables tend to kink or take a set during repeated tightening and untightening of the lacing system. In addition, the rough exterior surface of the multi strand cable increases friction in the lacing system as the cable travels through the lacing zone.

To address these concerns, Applicant describes "working" the multi strand cable to reduce the interstitial spaces between the strands. The specification describes a number of ways to work the strands to reduce the interstitial space. For example, the multi strand cable may be drawn and/or swaged. As understood by those of skill in the art, manipulating the cable in such a way changes the cross sectional shape of the individual strands in a manner that reduces the interstitial space. The exterior surface of the cable is also smoothed as the strands are compressed. Thus, a cable worked in this way exhibits a different cross-sectional profile than one that has simply been wound from multiple strands. The individual strands lose their generally round cross-section while the overall cross-section of the cable becomes less lobed and more round and the maximum cross-section is reduced. Such a worked cable is less likely to kink.

Applicant also describes impregnating the cable with another compound. The compound would fill the spaces, both interstitially and the longitudinal grooves between adjacent filaments along the outer surface. In such a worked cable, the cross-section would be substantially solid and have a generally circular cross section, contrary to the un-worked cable that would have interstitial spaces and a generally lobed exterior surface. Though working a cable to reduce its interstitial space can be accomplished to different degrees the fact that the strands have or have not been worked is not indefinite. One of skill in the art given the guidance in the specification would readily be able to test to determine if a multi strand cable had been worked to reduce its interstitial space. Applicants respectfully request withdrawal of the § 112, ¶ 2 rejection of Claim 1.

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Rejections under 35 U.S.C. § 103(a)

Claims 1 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carroll in view of Hallenbeck. Applicant respectfully traverses this rejection because Carroll, alone or in combination with Hallenbeck, fails to teach or suggest the elements of the claims. *See M.P.E.P. § 2143* (stating that in order to establish a *prima facie* case of obviousness for a claim, the prior art references must teach or suggest all the claim limitations).

Claim 1

As discussed above, Claim 1 recites, among other limitations, “a multi strand cable worked to reduce the interstitial space between the strands.” Carroll fails to teach such a limitation and modification of Carroll by the teachings of Hallenbeck also fails to teach such a limitation.

Carroll teaches a very different device than the lacing system disclosed and claimed in the present application. The Carroll device is for use with conventional shoe laces on conventional footwear to eliminate the need to tie the ends of the shoelaces and to allow for the release of excess tension in the portion of the shoe that flexes during use. As Carroll explains:

The use of the shoelace tension regulating device 24 may now be described. Prior to completely lacing up the shoelace 12 the user positions the device 24 atop the shoe with the opening 28 directed toward the wearer's ankle 102 and with the flange 56 facing the vamp of the shoe. As the ends 14 and 16 of the shoelace 12 emanate from the fourth pair of eyelets 22 immediately adjacent the flange 56, they are passed through the openings 60 in the flange 56 in the manner illustrated in FIG. 8. Lacing of the shoelace ends 14 and 16 is then continued in a conventional manner with the lace ends 14 and 16 crossing back and forth over the top of the shoe tongue up to the uppermost eyelets 22 at the top of the shoe 10.

Applicant's lacing system is fundamentally different. Applicant's tightening mechanism is not configured to work with traditional laces as taught in Carroll. Rather, Applicant's lacing systems provide a low friction lacing zone that distributes the lacing pressure in part through the use of lace guides and cables configured to minimize friction. Nor does Carroll teach a multi strand cable. Further, it does not teach working a multi strand cable to reduce the interstitial

space of between the strands. To the contrary, the use of special laces would defeat the purpose of Carroll which is to provide an alternative to tying the laces of a conventional shoe.

The Examiner relies on the teachings of Hallenbeck to modify the disclosure of Carroll. Hallenbeck teaches a tightening element 7 which can be "a wire or a rope made of plastic or metal." Though Hallenbeck teaches a wire or a rope, it does not appear to teach using a multi strand cable and does not teach or suggest manipulating the multi strand cable to reduce the interstitial space between the individual strands as recited in Claim 1.

The Examiner argues that "since the rope is made of plastic or metal it inherently has been worked to some extent in its fabrication so as to form the rope and in its formation had the interstitial space reduced." The Examiner appears to be referring to the bringing together of multiple strands during the fabrication of a multi strand cable. However, as discussed above, fabricating a cable from multiple strands is what generates the interstitial space between the strands. It is these very gaps which Applicant seeks to reduce, through the additional step of working the cable to modify the strand profiles to reduce interstitial space, and improve the exterior profile as well as strength to diameter characteristics.

Even assuming the rope of Hallenbeck includes multiple strands, Hallenbeck does not teach or suggest modifying the rope to reduce the interstitial spaces between those strands. Moreover, there is no motivation to add laces from Carroll into the system of Hallenbeck, especially in view of Hallenbeck's purpose of adapting to a conventional shoe. Because Carroll, alone or in combination with Hallenbeck, fails to teach or suggest each and every limitation of Claim 1, Applicant respectfully traverses the Examiner's rejection of Claim 1.

Claims 2 and 6-18, which depend from Claim 1, are believed to be patentable for the same reasons articulated above with respect to Claim 1, and because of the additional features recited therein.

Claim 22

Claim 22 recites, among other limitations, "a cable guided by the guide members and extending in a zig-zag pattern throughout the lacing zone, the cable having a first end and a second end, the first and second ends removeably secured with respect to a spool." Carroll, alone or modified by the teachings of Hallenbeck, fails to teach or suggest such limitations.

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Carroll fails to disclose a cable (instead Carroll is specially designed to cooperate with a conventional shoe lace); Carroll fails to disclose “guide members” as used in the context of Applicant’s claimed invention (Carroll uses instead conventional eyelets on conventional shoes); and Carroll fails to disclose “a tightening mechanism attached to the footwear member” as recited in Claim 22 (Carroll instead discloses a device which is suspended by the conventional shoe laces). The purpose of the device in Carroll is to cooperate with conventional footwear, by attaching to the shoe laces for the purpose of placing the shoe laces under tension. As such, Carroll provides no motivation to switch to a cable, or switch to lace guides, or attach the device to the footwear, as these would be inconsistent with Carroll’s objective of providing an add on component for use with conventional footwear.

The Examiner refers to Hallenbeck as suggesting modifying Carroll by substituting cable for the conventional shoe lace. Initially, however, it is not clear that Hallenbeck even suggests the use of cable. Hallenbeck at column 2 lines 36 through 38 reads as follows:

A tightening element 7, for example, a wire or a rope made of plastic or metal, is permanently connected with central rotary closure 6.

Applicant’s Claim 22, in contrast, recites that the cable is removably secured with respect to a spool.

In any event, there is no motivation for combining the wire or rope disclosed in Hallenbeck with the system of Carroll in view of Carroll’s objective of providing an add on tightener for use with conventional footwear having conventional laces. Nor would Hallenbeck provide a motivation for substituting a wire or rope into Carroll, while disregarding the permanent connection disclosed in Hallenbeck between the wire or rope and the central rotary closure.

In view of the foregoing, Applicant respectfully submits that the art of record fails to provide a sufficient motivation to combine the teachings of Carroll and Hallenbeck in the manner necessary to provide a *prima facie* showing of obviousness. As such, Applicant respectfully requests that the obviousness rejection be withdrawn.

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Claims 23-33, which depend from Claim 22, are believed to be patentable for the same reasons articulated above with respect to Claim 22, and because of the additional features recited therein.

In view of the forgoing, the present application is believed to be in condition for allowance, and such allowance is respectfully requested. If any pending issues remain or if any issues require further clarification, the Examiner is respectfully invited to call Applicant's representative at the number indicated below in order to promptly resolve such issues. Please charge any additional fees, including any fees for additional extensions of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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